CHAPTER 9 KEY POINTS

Freight movement is significant to Utah's economy. Over 65,000 Utahns are employed by freight-related industries, which service thousands more in the movement of imports and exports.

Trucking is the dominant mode of moving freight in Utah. An increased dependence on the trucking industry places further stress on highway infrastructure.

Railroad and pipeline transportation relieves stress on Utah's highways. These modes transport goods that would otherwise place thousands more trucks on the road each day.

Click here for the UDOT Planning webpage.

Chapter 9
Freight

9.1 Overview

Efficient freight movement is critical to a healthy economy and reflects a well-planned transportation system. As a crossroads state for several transportation modes, Utah plays a major role in moving freight across the United States.

Each year, 96.4 million tons of freight valued at $42.3 billion is shipped from Utah via all modes of freight transportation, and 87.7 million tons of freight valued at $54.4 billion arrives in Utah. This is a yearly total of 184.1 billion tons of freight shipped to and from Utah, valued at $96.7 billion. These numbers do not reflect the considerable amount of freight passing through Utah or freight being shipped entirely within the state's boundaries, for which tonnage figures are not yet available.

Nearly 80 percent of all Utah communities depend exclusively on truck transportation to supply their goods.

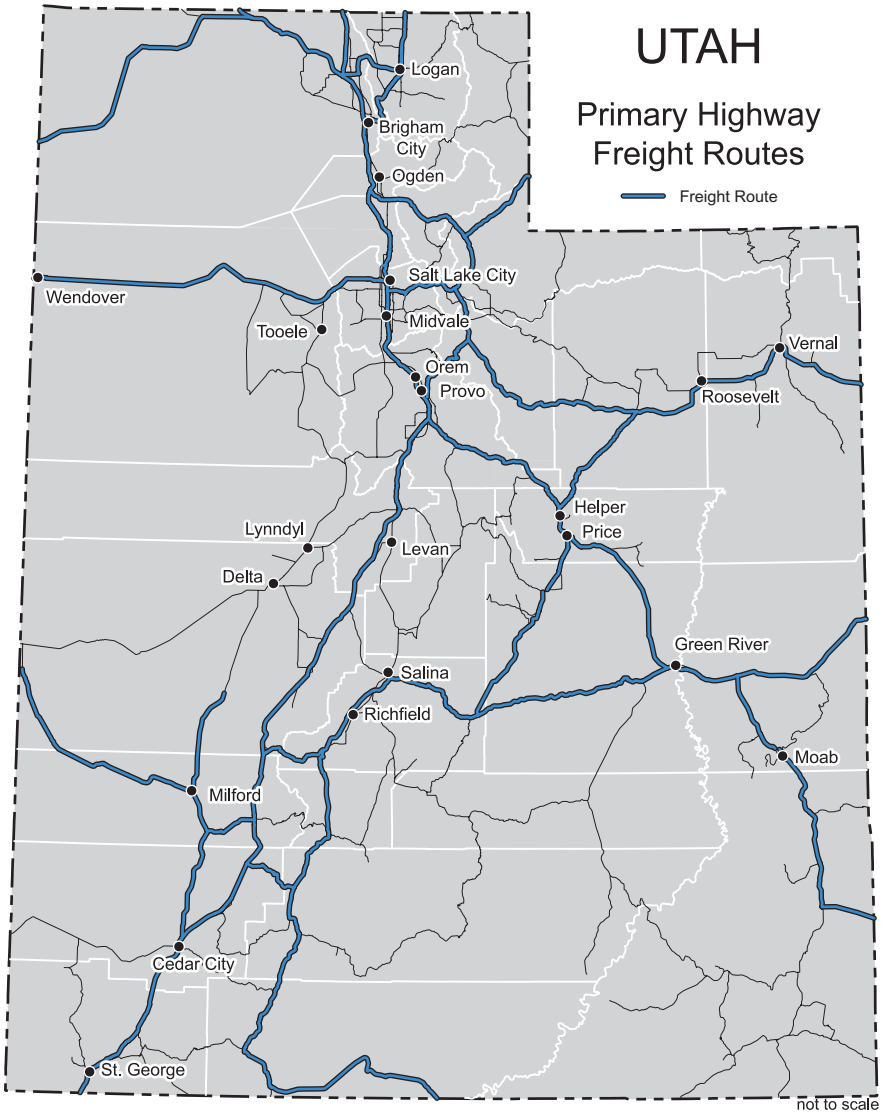
Trucks account for almost 70 percent of Utah's freight tonnage. Railroads carry approximately 25 percent, and pipelines about 4 percent. Air cargo, including parcel and courier service, accounts for less than one percent of the total freight volume moved to and from Utah. The following sections outline the four modes primarily used for freight movement in Utah.

Trucking

As the primary mover of Utah freight, the trucking industry is the transportation mode that most impacts and is most impacted by the state's highway system. Utah's truck freight movements and tonnage numbers are higher than many other larger states. This is due to the large amounts of coal moved by truck within Utah, and the many freight distribution centers located at the crossroads of three interstate highways (I-80, I-84, and I-15) in the northern Wasatch Front region. The advantages of transporting freight by truck include:

- Speed
- Convenient door-to-door service
- Dependable, timely delivery
- Flexibility
- Competitive pricing

Truck transportation works in conjunction with railroads, pipelines, and air freight to provide efficient multimodal transportation to Utah shippers. These represent the other major modes of freight movement in Utah.



Railroads move 135 million tons a year in Utah.

Railroads

Railroad transportation of freight benefits Utah's highway system in many ways. The advantages of rail are:

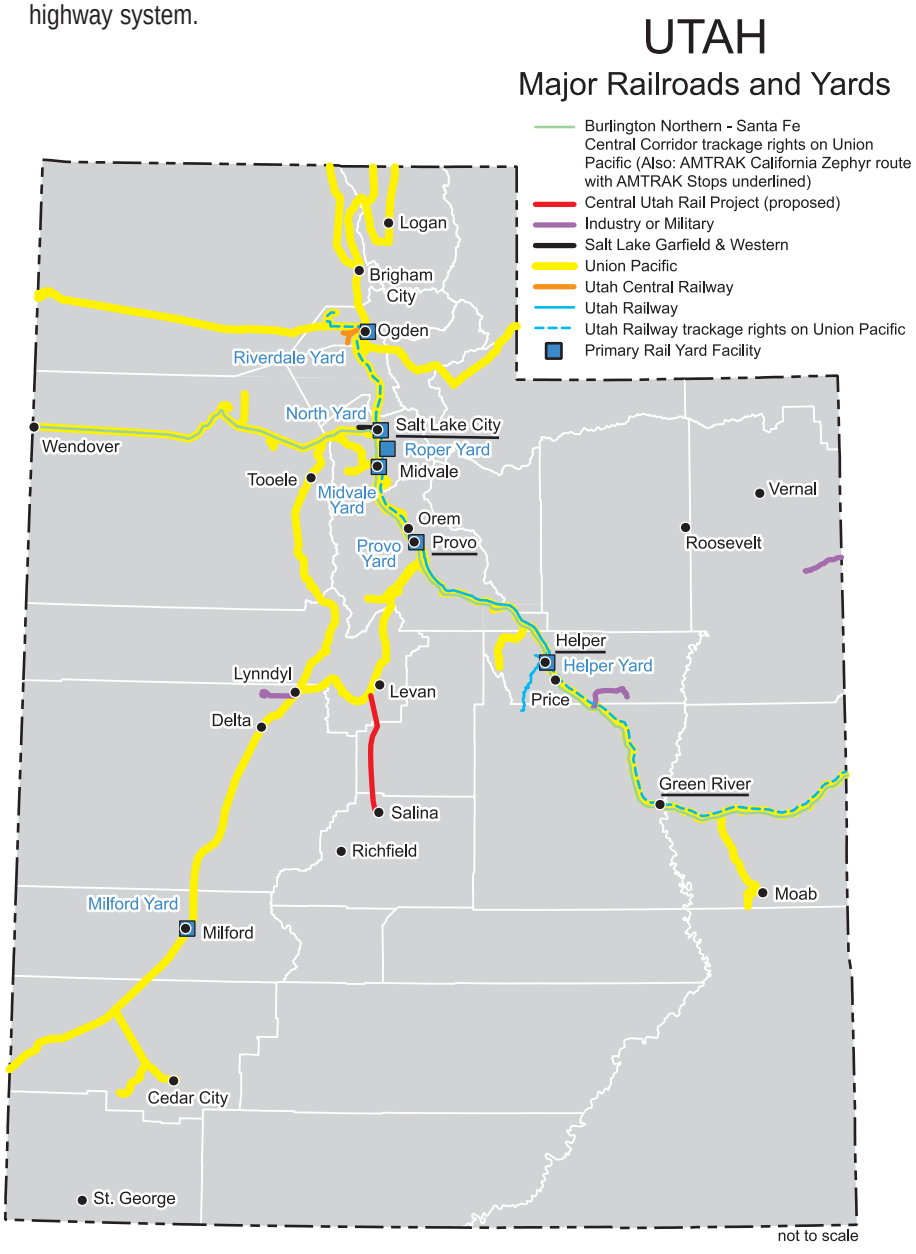
- Fuel efficiency
- Low labor costs
- Privately-maintained infrastructure
- Safety
- Low cost, particularly for bulk commodities

Since the completion of America's first transcontinental railroad at Promontory, Utah in 1869, railroads have played a major freight transportation role in Utah and the Mountain West. Although it is still an important rail center in the 21st century, Utah's position as an important western rail crossroads has diminished due to rail industry

changes and mergers of western America's once-numerous railroad companies into two large systems.

The ongoing impact of this railroad industry change on the state's economy and transportation system is considerable. For Utah shippers, the lack of availability of competitive alternatives within the rail sector poses a serious challenge. Additionally, the railroads are faced with operational challenges posed by obsolete geometrics of parts of their infrastructure, both inside and outside of Utah, that affect routing through Utah.

The average freight train carries 6,000 tons, and an average truck carries 35 tons. It would take 171 trucks to carry one standard freight train's load. In 2000, Utah's railroads handled over 135 million tons of freight. If this rail freight had been transferred onto the highway system, 3.8 million additional truck movements would have been needed. A move to trucking over rail could significantly impact the state highway system.



Pipelines

Pipelines keep up to 1,500 trucks off Utah's highways each day.

Pipelines also have a major positive impact on transportation in Utah. Pipelines divert over 1,500 trucks each day from some of Utah's busiest highways, and support Utah's industrial economy and tax base. They primarily carry liquid commodities (i.e., crude oil and gasoline) and solid materials mixed with water in slurry form. Like railroads, the pipeline industry owns, operates, and maintains its own infrastructure.

The advantages of transporting liquids by pipeline include:

- Energy efficiency
- Privately-maintained infrastructure
- Low cost for liquid bulk commodities
- Narrow corridor
- Safety and security
- Not labor intensive

Air Freight

Air cargo is the smallest freight transportation component in Utah. Salt Lake City International Airport (SLCIA) is a local hub for three air freight/cargo carriers: United Parcel Service (UPS), Federal Express (FedEx), and the United States Postal Service (USPS). In 2001, a combined total of 238,798 tons of mail and cargo enplaned and deplaned at SLCIA.

Air freight's primary advantage is speed. Because of its location in the Mountain Time Zone, Salt Lake City is not attractive for air freight/air parcel shippers who prefer to centralize their operations relative to their major markets in the Eastern and Central Time Zones. The overall decline in air transportation since September 11, 2001 has also effectively negated previously projected freight capacity at SLCIA.

Waterways

Utah has direct links to Pacific and Gulf Coast sea ports.

No freight is actually moved by water transportation in Utah, other than a limited number of local delivery trucks that use two ferryboats between Bullfrog and Halls Crossing on Lake Powell in the southeastern part of the state. However, Utah rail and truck services handle numerous shipments to and from California seaports. Most of these shipments pass through Utah en route to or from points east.

As a major break/bulk distribution center, Utah handles numerous truck shipments from West Coast ports to destinations in the Midwest, East, and deep South. Utah is also located on Union Pacific Railroad's primary intermodal routes between the Ports of Oakland, Long Beach, and Los Angeles, and the Chicago rail gateway to the northeastern states. The nearest port facilities directly available to Utah shippers are:

- Port of Umatilla, Oregon, on the Columbia River (595 highway miles from SLC)
- Ports of Los Angeles/Long Beach, California, on the Pacific Coast (705 miles)
- Port of Oakland, California, on the Pacific Coast (730 miles)
- Port of Omaha, Nebraska, on the Missouri River (936 miles)
- Port of Houston, Texas, on the Gulf of Mexico (1,564 miles)

9.2 Major Focus Areas and Goals

In developing Transportation 2030, UDOT conducted focus groups of freight shippers and industries. The information gathered helped UDOT become better aware of the needs for freight mobility. This was a first step toward developing a freight plan that will be fully integrated with other elements of UDOT's long-range planning. The following comments are presented to illustrate these needs, with the expectation that some will become elements of projects in future editions of Transportation 2030.

Highway freight mobility projects based on public input are shown on regional maps at the end of this chapter.

Highway Infrastructure

During community outreach meetings, trucking industry employees and representatives suggested the following improvements to highway infrastructure in Utah:

Public Comment – Existing and planned passing lanes should be at least 1.5 to 2.5 miles in length. Shorter passing lanes are only marginally adequate for automobiles to pass slower vehicles such as trucks and RVs, and do not allow faster-moving trucks to pass slower ones. Longer passing lanes would improve the overall traffic flow on Utah's many two-lane highways, while greatly improving freight mobility and overall highway safety.

Public Comment – New passing lanes are needed on several two-lane highways. New passing lanes on busy two-lane roads will keep automobiles and trucks moving efficiently, extending the operational viability of such routes.

Public Comment – Improve traffic flow, turning radii, and safety of freeway interchanges. Many freeway interchanges have ramps with inadequate turning radii for longer trucks. Many interchanges are an older, cloverleaf design, which creates short and dangerous merging areas for traffic. Non-traditional designs such as roundabouts can be both difficult to maneuver and dangerous when mixing truck traffic with automobiles. Ramps with short merge lanes also present both trucks and autos with a dangerous situation.

Public Comment – Install advance warning signals on high-speed roads equipped with traffic signals. Busy highways that combine higher speeds with traffic signals need to be equipped with advance warning flashers to let traffic approaching an intersection know that the light is about to change. In bad weather it can be difficult for a truck to stop once the driver can see a signal turning yellow.

Public Comment – Primary truck routes need to have paved shoulder/emergency lanes should a truck need to make an emergency stop. Currently, many principal arterials in Utah lack this feature, forcing the truck to stop in the traffic lane, impeding traffic and creating a hazard for both truck drivers and motorists.

Public Comment – UDOT and the trucking industry need to further investigate the complex issue of additional rest stop/truck parking areas. According to Utah's trucking industry, there are currently not enough rest areas on Utah's highways, and those that do exist lack adequate parking for trucks,

Major focus areas identified from public input:

- Passing lanes
- Interchanges
- Advance Signal Warning Systems
- Paved shoulders
- Emergency lanes
- Rest stops and parking areas
- Striping

Major focus areas for rail freight:

- Improving infrastructure funding
- Improving service levels for Utah's rail-dependent industries

particularly oversized loads and triple trailers. Several Utah communities lack adequate truck access, preventing trucks from using facilities in those towns.

Public Comment – UDOT should continue to investigate improved quality highway striping with extended lifespan. Longer-lasting, more visible highway striping would be a major improvement in highway safety, particularly at night and in rainy weather.

Railroad Infrastructure

Much of the infrastructure of the western railroads was originally built more than a century ago. Although the rails, ties, and ballast are routinely maintained and replaced, track geometrics have remained in much the same configuration. Additionally, several different railroad companies, each competing for the same markets, installed routes that were not intended to be complementary. With the many mergers since deregulation in 1980, culminating in the 1996 Union Pacific - Southern Pacific merger, all major western routes came under the auspices of two railroads, Union Pacific and Burlington Northern Santa Fe, creating a de facto network. As a result, there are several locations that warrant upgrades in order for the remaining railroads to operate more efficiently and better serve Utah shippers. The magnitude of these improvements is daunting to the private railroads in much the same way that major highway upgrades are to departments of transportation. UDOT is committed to maintaining open dialogue with rail providers to ensure that the interface between the railroads and other transportation modes may operate in a safe and efficient manner.

9.3 Funding

Trucking

Highway funding in Utah comes from federal and state transportation funds. Needs for highway freight mobility compete with other highway projects for inclusion in the Statewide Transportation Improvement Plan (STIP). Highway funding is outlined in greater detail in Chapter 3 (*Highways*).

Railroads

Freight rail infrastructure is privately funded. Federal grants have long been available for rail transit, commuter rail, and some intercity rail passenger projects and operations. However, there has never been a federal funding source established to address the infrastructure needs of freight railroading. Aside from the land grants provided by the federal government prior to 1871, America's railroads have been constructed, maintained, and operated with private capital.

9.4 Freight Infrastructure Needs

Trucking

The following is a list of freight mobility-related highway infrastructure projects that would improve truck movements statewide. These highway needs have been identified by UDOT's public involvement process with the trucking industry. Although the list is only illustrative at this point, it will be made available for discussion as Chapter 3 (*Highways*) is updated in the future.

Needs as identified from public input

COUNTY	REGION	ROUTE	PROJECT NAME/LOCATION	PROJECT CONCEPT	ESTIMATED COST
BOX ELDER/CACHE	Region 1	30	Passing lanes - WB, between SR-23 and top of hill; EB, between SR-38 and Beaver Dam	Add 1.5-mile uphill passing lanes	$1,200,000
WEBER	Region 1	26	Riverdale Road connector lane between NB I-15 and EB I-84	Add connector lane to eliminate truck merge on Riverdale Road	$500,000
CACHE	Region 1	91	Intersection of US-91 and 600 North in Logan	Add traffic signal	$200,000
DAVIS	Region 1	15	Redesign Exits 334 and 335 in Layton	Redesign exits for better auto and truck traffic flow	$80,000,000
DAVIS	Region 1	89	US-89 Advanced Warning Flashers between I-15 and I-84	Add Advance Warning Flashers for indication of traffic signal change	$250,000
BOX ELDER	Region 1	30	Safety Improvements between Nevada State Line and Logan	Repave and add shoulders and install right-of-way fence in open range areas	$5,000,000
WEBER/BOX ELDER	Region 1	15	I-15 widening from Ogden 31st St. to US-89 in Brigham City	Add lane in each direction	$20,000,000
DAVIS	Region 1	15	I-15 widening from Beck St. in SLC to US-89 in Farmington	Add lane in each direction	See I-15 North SEIS
DAVIS	Region 1	15	Redesign Exits 318, 320, and 321	Redesign exits for better auto and truck traffic flow to industrial/business areas in North Salt Lake, Bountiful, and Woods Cross	See I-15 North SEIS
DAVIS	Region 1	15/215	Redesign north interchange of I-15 and I-215	Add movement from I-15 NB to I-215 SB and add movement from I-215 NB to I-15 SB	See I-15 North EIS
SALT LAKE	Region 2	215	Redesign ramps at Exit 21 (California Ave.)	Increase turning radii to accommodate longer trucks entering and exiting	$100,000
SALT LAKE	Region 2	172	Widen 5600 West between I-80 and SR-201	Widen to four lanes	See Mountain View Corridor Study
SALT LAKE	Region 2	201	Widen SR-201 between I-215 and I-15	Add one lane each direction	$65,000,000
SALT LAKE	Region 2	15	Redesign Exit 314 (2300 North) NB and SB ramps in SLC	Redesign ramps for improved truck flow, acceleration and deceleration, and merge safety	See I-15 North SEIS
SALT LAKE	Region 2	15	Widen I-15 between Beck Street and I-215 North Interchange	Widen to three lanes each direction	See I-15 North SEIS
SALT LAKE	Region 2	201	Upgrade SR-201 from Magna to I-80	Upgrade to controlled access, four-lane highway	$150,000,000
SALT LAKE	Region 2	15	Reconfigure Exit 312 (600 North) ramp to SB I-15 in SLC	Change from current layout of three lanes merging abruptly into one lane on-ramp	$1,000,000
SUMMIT	Region 2	80/84	Redesign ramp from I-84 EB to I-80 WB at Echo Jct.	Redesign ramp to increase merge distance for slow trucks	$2,000,000
SALT LAKE	Region 2	201/215	Interchange between SR-201 and I-215	Redesign to eliminate clover leaf layout	See SR-201 Widening Project EA
SALT LAKE	Region 2	80/215	Redesign interchange at mouth of Parley's Canyon	Redesign interchange to reduce sharp curves and increase merge distance	See WFRC Long Range Plan
DUCHESNE	Region 3	40	Modify curb on US-40 in downtown Roosevelt	Modify curb to improve turning radii for EB trucks	$50,000
DUCHESNE	Region 3	40	US-40 passing lane at Little Bush Creek west of Duchesne	Eliminate or lengthen dangerously short passing lane	$1,000,000
DUCHESNE	Region 3	40	US-40 passing lanes between Duchesne and Myton	Add two 2.5-mile passing lanes to both EB and WB	$4,000,000
WASATCH	Region 3	40	US-40 from mouth of Daniels Canyon to US-189 in Heber City	Upgrade to four lanes	$4,000,000
UINTA	Region 3	40	US-40 add passing lanes between Vernal and Gusher	Add two-mile passing lane to uphill segment	$3,000,000
DUCHESNE	Region 3	40	US-40 passing lane at Bottle Hollow east of Roosevelt	Add 1.5 to 2.0-mile passing lane to WB side	$3,000,000
WASATCH/DUCHESNE/ UINTA	Region 3	40	US-40 shoulder widening between Heber City and Vernal	Widen/add shoulders	$10,000,000
WASATCH/DUCHESNE	Region 3	40	US-40 widening between Daniel's Summit and Roosevelt	Widen to four lanes as practical	$100,000,000
WASATCH	Region 3	189	US-189 widening in Provo Canyon near Deer Creek Reservoir	Complete widening project. Eliminate oversize truck restriction	Unknown
CARBON	Region 4	6	US-6 Peerless Port of Entry Redesign/Relocate	Redesign Port of Entry for better access or relocate to safer location	$3,000,000
WASHINGTON	Region 4	15	I-15 Exit 4 in Bloomington/St. George lighting addition	Add overhead lights to improve visibility and safety at teardrop on east side of I-15	$250,000
CARBON/EMERY	Region 4	6	US-6 add passing lanes between Wellington and I-70	Add at least three two-mile passing lanes in each direction	$12,000,000
GRAND/SAN JUAN	Region 4	191	US-191 add passing lanes between Crescent Junction and Monticello	Add 1.5 to 2.0-mile passing lanes in each direction	$20,000,000
BEAVER	Region 4	21	Upgrade railroad crossing in Milford at SR-21 and Union Pacific railyard	Upgrade to grade-separated crossing with SR-21 over railyard	$2,000,000
CARBON/EMERY/SEVIER	Region 4	10	Add passing lanes between Price and Fremont Jct.	Add four two-mile passing lanes in each direction	$20,000,000
WASHINGTON	Region 4	15	I-15 Exit 4 in Bloomington/St. George redesign	Redesign Interchange to a more conventional design, eliminating circle and teardrop	$5,000,000
KANE	Region 4	89	US-89 add passing lanes between Kanab and Utah/Arizona State Line	Add three two-mile passing lanes in each direction	$15,000,000
BEAVER/IRON	Region 4	130	SR-130 add passing lanes between Cedar City and Minersville	Add two two-mile passing lanes	$10,000,000
GARFIELD/KANE	Region 4	89	US-89 add passing lanes south of SR-20	Add passing lanes	Unknown

Railroads

The following list of needed rail industry expansions and improvements has been compiled after four years of research, including extensive meetings with rail industry officials. This list is divided into three categories: new rail infrastructure, improvements to existing rail infrastructure within Utah, and improvements to rail facilities outside state boundaries that will positively impact rail service in Utah. As discussed previously, freight rail infrastructure is financed by the private railroads.

As such, the following project lists are provided solely to be illustrative.

New In-State Rail Infrastructure Needs

COUNTY	REGION	PROJECT NAME/LOCATION	PROJECT CONCEPT	ESTIMATED COST
UINTA	Region 3	Isolated Empire Rail Project	New rail between existing lines in Colorado and the Uinta Basin	$300,000,000
SEVIER	Region 4	Central Utah Rail Project	New rail line between Levan and Salina/Sigurd	$71,000,000

In-State Rail Infrastructure and Service Needs

COUNTY	REGION	PROJECT NAME/LOCATION	PROJECT CONCEPT	ESTIMATED COST
BOX ELDER	Region 1	Malad Branch Track Upgrade serving Thiokol and Nucor Steel	Upgrade track to increase operating speeds	$3,000,000
BOX ELDER	Region 1	Lucin Cutoff Upgrade on Great Salt Lake Causeway	Re-equip causeway with signals and sidings to increase speeds and reduce congestion	$10,000,000
SALT LAKE	Region 2	Grand Tower Junction/North Salt Lake Yard Upgrade	Realign junction to increase operating speeds and reduce congestion	$30,000,000
SALT LAKE	Region 2	Roper Yard Expansion	Extend existing track to current train-length standards; add tracks	$5,000,000
UTAH	Region 3	Provo Yard Expansion	Extend existing track to current train-length standards; add tracks	$1,000,000
CARBON	Region 4	Southern Utah Coal Corridor Upgrade	Extend existing sidings to current train-length standards; add track	$3,000,000
BEAVER	Region 4	Milford Yard Expansion	Extend existing track to current train-length standards; add tracks; SR-21 overpass to eliminate traffic delays	$3,000,000

Out-of-State Rail Infrastructure Needs

COUNTY	REGION	PROJECT NAME/LOCATION	PROJECT CONCEPT	ESTIMATED COST
		Denver Bypass	Construct bypass of congested rail yards in Denver	$35,000,000
		Donner Pass Capacity Upgrade	Reinstall double track at Donner Summit; increase tunnel height to allow passage of stack trains	$56,000,000

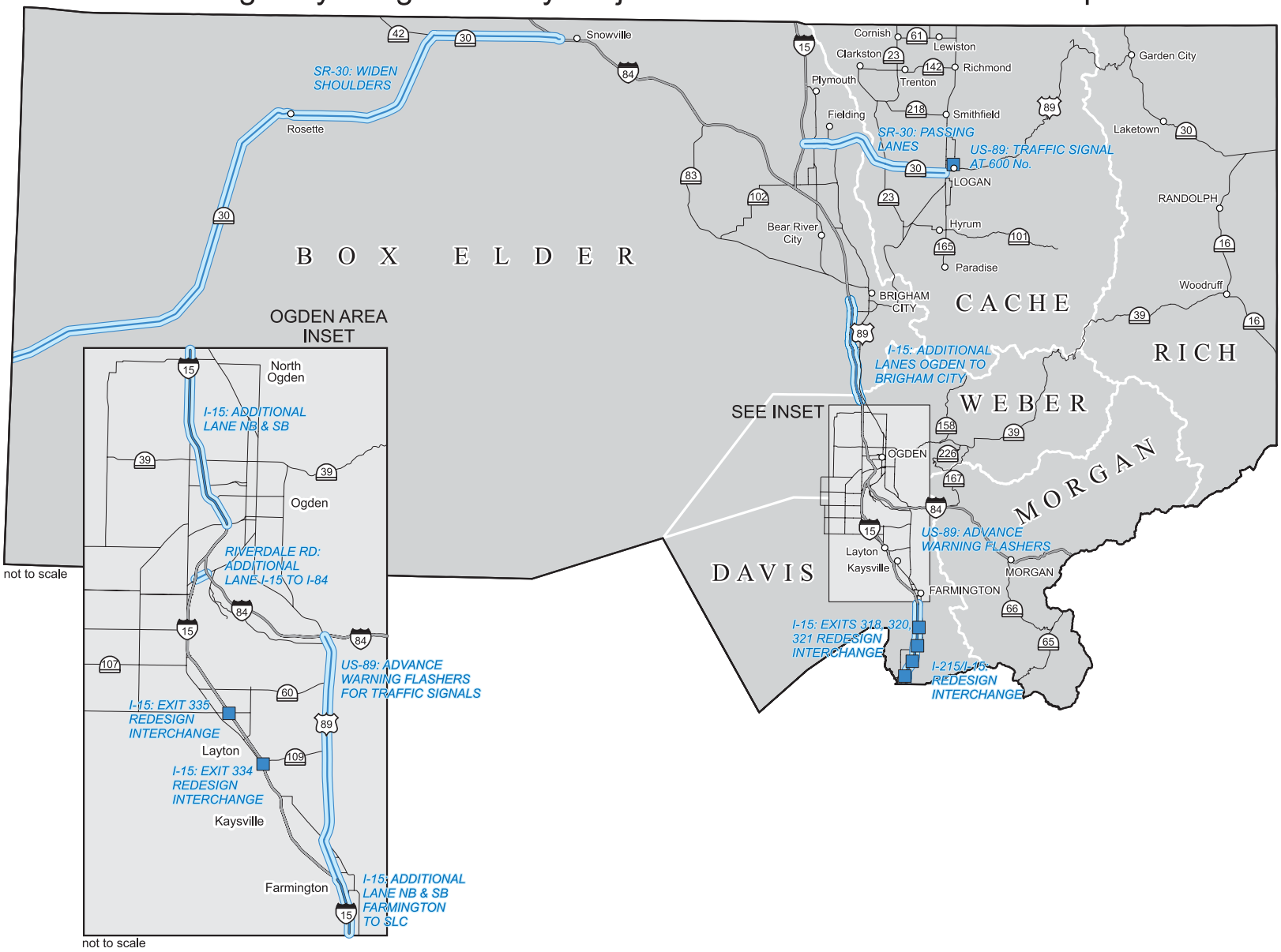
9.5

9.5 Conclusion

As the "Crossroads of the West," Utah has an important role in the movement of freight by both highway and railroad. As such, UDOT's challenge as it looks ahead over the next three decades will be to effectively address freight mobility issues by bringing key components of freight into the planning and design process in support of the state's highway system. The establishment of a Utah Freight Advisory Committee, as recommended by the U.S. Department of Transportation, will begin to facilitate dialogue about freight mobility.

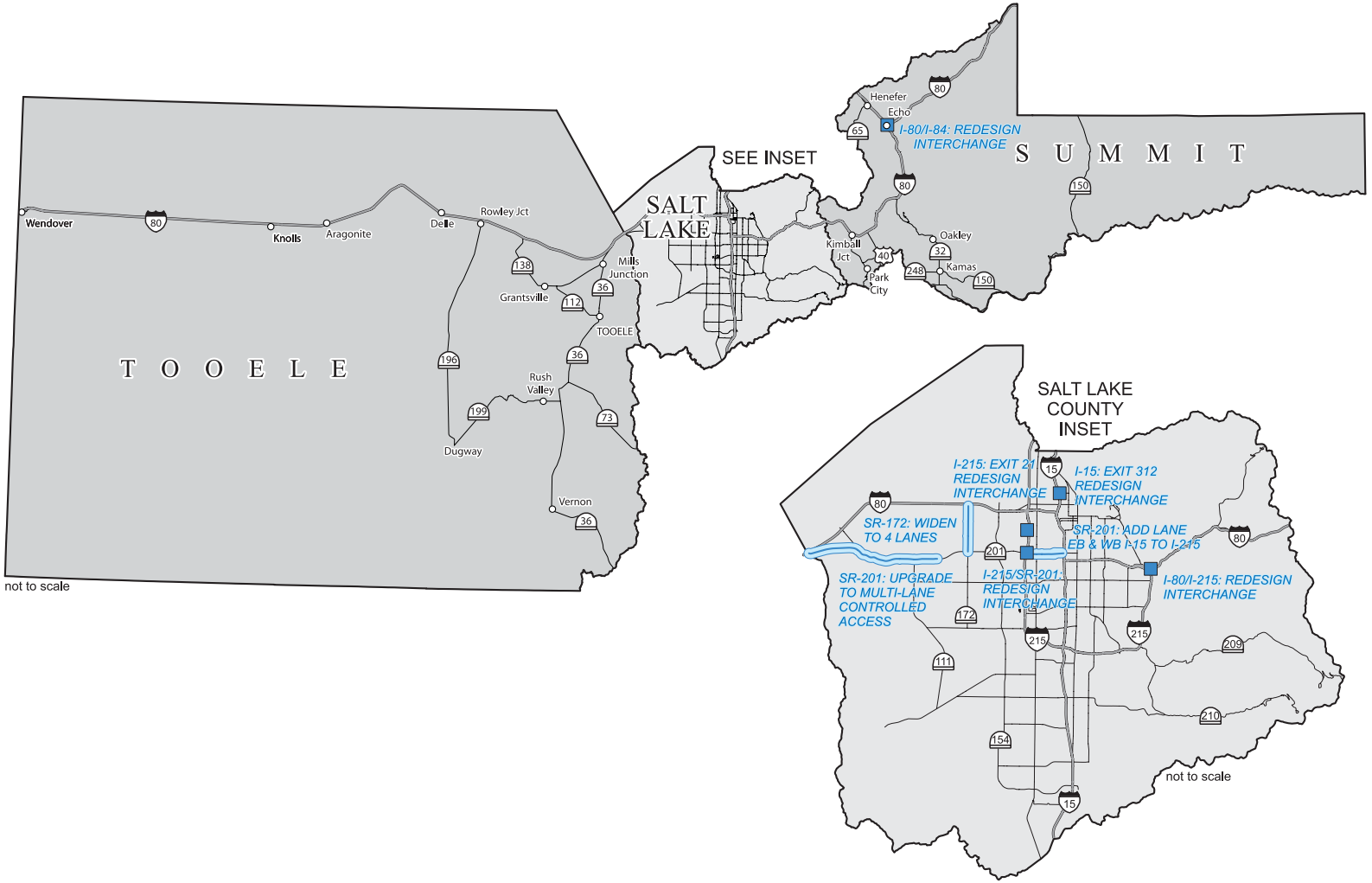
REGION ONE

Highway Freight Mobility Projects as Described from Public Input



REGION TWO

Highway Freight Mobility Needs as Described from Public Input



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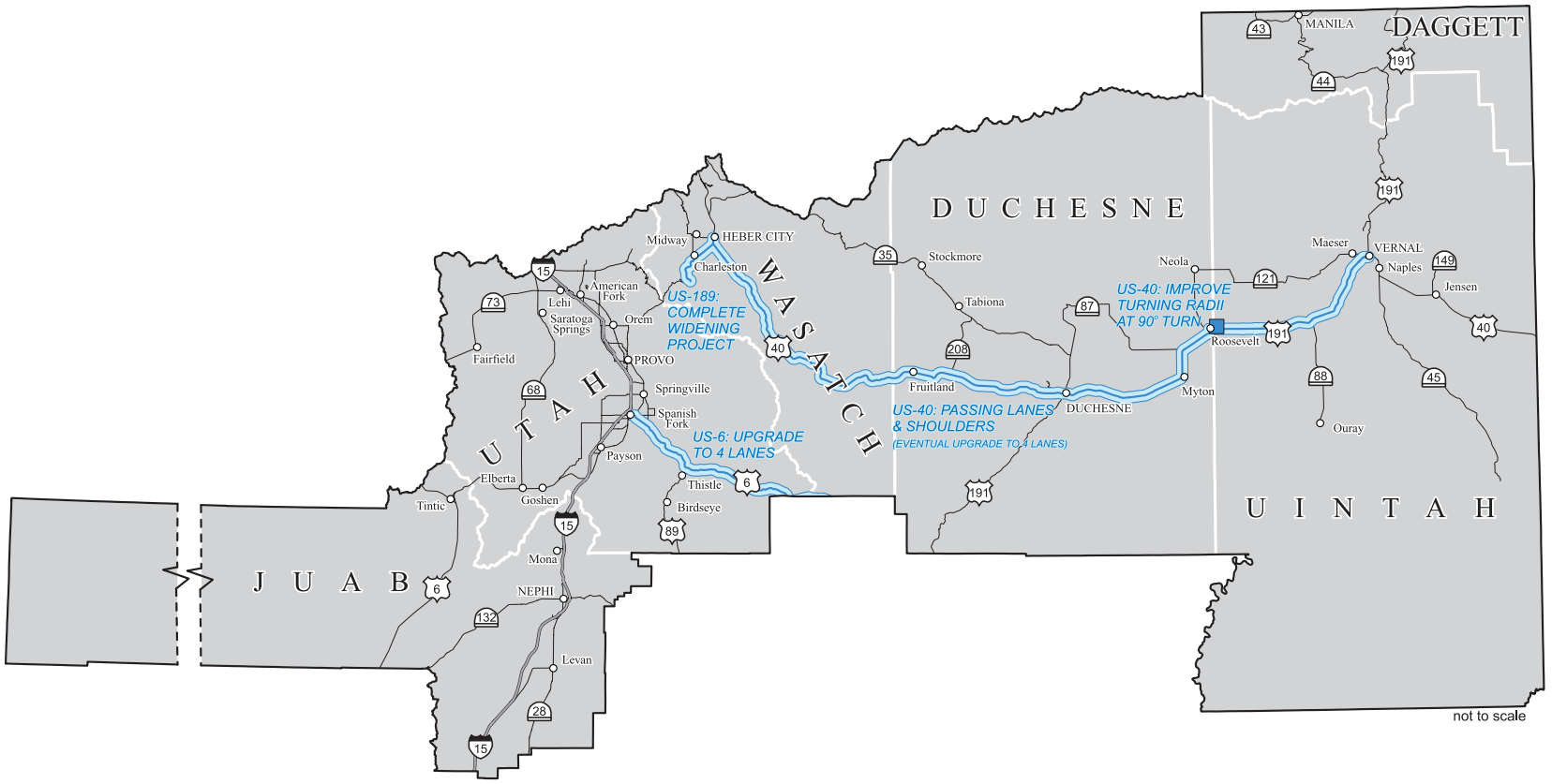

REGION FOUR

Highway Freight Mobility Needs as Described from Public Input